

10.0 DESCRIPTION OF OPERATING PLANS

10.1 Introduction

This chapter presents the new operating plans for each facility on the Abitibi River, the end result of the Water Management Plan. For each facility, the operating regime is provided, listing the benefits, conflicts and Outstanding Information Gaps. Also provided is a target curve for each operating regime to graphically represent the operating plan. These operating plans are legally enforceable under the *Lakes and Rivers Improvement Act (LRIA)*.

1.0 Watabeag Lake Dam (OPGI)

Planning Team Consensus
 PAC Consensus
 Steering Committee Concurrence

Selected Operating Option

Operating Range: 319.00 – 321.70 m
Absolute Range: 319.00 – 322.31 m
Energy Emergency: None
Summer Band: 320.57 – 320.82 m Victoria Day weekend to Thanksgiving weekend (**new**)
Winter Drawdown: 319.00 m but target 319.62 m (**new**)
Flood Allowance: 321.70 – 322.31 m
Maximum Discharge: Maximum discharge limited to 17 cms at all times.
Minimum Discharge: None
Fisheries Constraint: None (**new**)
Natural water level regime: N/A
Others: Educate the public.

Benefits:

- This operating regime maintains appropriate Lake Trout habitat and the revised drawdown strategy will reduce the impact to Lake Trout. The existing drawdown limit of 0.45 m from October to mid February was removed and replaced with a target to limit the drawdown to a minimum elevation 319.62 m. Although the minimum elevation of 319.00 m remains the absolute minimum to be used if necessary, the new drawdown target will generally result in higher water levels drawdown minimum. This should reduce the impact to lake trout spawning and incubation, thus improving recruitment from current rates.
- The revised summer band is expected to accommodate the majority of users' navigational and recreational needs. This change resulted from the Wildgoose Cottagers' Association request that the summer band be lowered.
- The maximum discharge of 17 cms protects the integrity of a bridge downstream.
- The drawdown strategy maintains flood mitigation and public safety. This regime also maintains public awareness.
- The water levels are maintained below 321.70 m to minimize erosion in Watabeag Lake.

Conflicts:

- This regime limits maximum power generation downstream (OPGI – 800 households per year / 9,600 MW-hr per year, ACCC – 88 households per year / 1,056 MW-hr per year and Algonquin – 22 households per year / 264 MW-hr per year)
- Winter recreation downstream of dam may be affected by the drawdown. Users must be cautious due to the possibility of varying ice conditions.

Outstanding Information Gaps:

- There is an outstanding information gap on Fisheries Lake Trout Option 2 to extend the drawdown constraint from October to the March 30th, therefore this Option 2 will be considered once data from the study is available. There is an outstanding information gap to verify 17 cms maximum discharge limit still applies now that one bridge has been removed.

2.0 Frederickhouse Lake Dam (OPGI)

Planning Team Consensus
 PAC Consensus
 Steering Committee Concurrence

Selected Operating Option

Operating Range:	269.60 – 274.40 m
Absolute Range:	269.60 – 274.65 m
Energy Emergency:	None
Summer Band:	274.10 – 274.40 m from Victoria Day weekend to Labour Day weekend (new) 273.90 - 274.40 m Labour Day weekend to Thanksgiving weekend (new)
Fisheries Constraint:	Target 274.10 m by Labour Day weekend (voluntary) (new) Target 273.90 m by Thanksgiving weekend (voluntary) (new)
Wildlife Constraint:	at the onset of freshet, close the dam and begin filling the lake to 274.20 m as soon as possible
Winter Range:	269.60 – 274.40 m Thanksgiving weekend to ice cover (Thanksgiving at 273.90 m) 269.60 – 274.65 m from ice cover to freshet
Flood Allowance:	274.40 – 274.65 m
Maximum Discharge:	None
Minimum Discharge:	None
Natural Water Level Regime:	N/A
Others:	Educate the public

Benefits:

- By lowering the water levels in the fall by 20 cm, it is intended to scrub spawning shoals with wave action to improve Walleye habitat. This moves toward a more natural regime and the natural scrubbing of the shoals by wave action emulates what would happen in an unregulated lake that would have greater fluctuations in water levels during this period.
- This operating regime accommodates the majority of users' navigational and recreational needs. The lower limit of the summer band has been lowered by 10 cm which will also facilitate maintenance of the summer band.
- This operating regime maintains public safety and public awareness.
- The drawdown strategy and flood allowance Maintain flood mitigation.
- The summer maximum was reduced to 274.40 m in 1999 to mitigate erosion in Nighthawk and Frederickhouse Lakes. This operating regime maintains this constraint to mitigate erosion.
- This operating regime maintains a previous constraint agreed upon with Ducks unlimited that improves duck nesting habitat.

Conflicts:

- This regime limits maximum power generation downstream (OPG – 3,600 households per year / 43,200 MW-hr per year, ACCC - 400 households per year / 4,800 MW-hr per year)
- Lowering the summer band from Labour Day weekend to Thanksgiving weekend to scrub the shoals may affect some users' navigation and recreation during that period. This may result in increase flows during fall freshet and may also impact erosion and trapping downstream.

Outstanding Information Gaps:

- This operating regime will be monitored for effectiveness in enhancing the fish habitat and will be reviewed when results from the shoal study are available in 2006.
- A shoreline erosion inventory study will be conducted in 2004 / 2005.

3.0 Twin Falls G.S. (ACCC)

Planning Team Consensus
 PAC Consensus
 Steering Committee Concurrence

Selected Operating Option – Lake Abitibi

Operating Range: 263.42 – 265.27 m
Absolute Range: 263.25 – 265.39 m
Energy Emergency: None
Summer Band: 264.50 – 265.27 m from Victoria Day weekend to Thanksgiving Day weekend
(new)
Winter Drawdown: Minimum elevation of 263.42 m from mid Nov to early April
Flood Allowance: 265.27 – 265.39 m
Maximum Discharge: None
Minimum Discharge: None
Natural Water Level Regime: N/A
Others: In 1927 a court decision established a maximum allowable elevation of 265.39 m to prevent flooding in Quebec
 Educate the public

Selected Operating Option – Twin Falls GS

Operating Range: 263.12 – 265.27 m
Absolute Range: 262.92 – 265.39 m
Energy Emergency: None
Summer Band: 264.00 – 265.27 m from Victoria Day weekend to Thanksgiving Day weekend
(new)
Winter Drawdown: Minimum elevation of 263.42 m from mid Nov to early April
Flood Allowance: 265.27 – 265.39 m
Maximum Discharge: None
Minimum Discharge: None.
Natural Flow regime: **Low Flow :** None
Bankfull Flow: None
Riparian Flow: None
Others: Educate the public

Benefits:

- The current operating regime maintains appropriate walleye and whitefish habitat. Once the bathymetry study has been completed, the operating regime will be re-visited to determine if improvements can be made for fisheries.
- Navigational and recreational opportunities are enhanced by implementing a summer band. This formalizes the navigational and recreational needs of the users. In addition, the summer band will improve sustainable economic opportunities and benefit trappers.
- This operating regime maintains the legal maximum elevation established in a 1927 court decision to prevent flooding in LaSarre, Quebec. This maintains protection of docks and shorelines upstream and on Lake Abitibi from flooding.
- This operating regime maintains public safety and public awareness.
- This operating regime maintains wildlife habitat for a broad range of species.
- This operating regime provides a good balance between the environment, society and power generation.

Conflicts:

- This regime limits maximum power generation (OPGI – 11,000 households per year / 132,000 MW-hr per year, ACCC – 1,500 households per year / 18,000 MW-hr per year and Algonquin – 400 households per year / 4,800 MW-hr per year)
- The summer band may affect flexibility of mitigating flooding during the summer months.
- Implementation of a summer band deviates from a natural regime.
- There are concerns from Ontario Parks and the public that existing operating practice may negatively affect shoreline erosion.

Outstanding Information Gaps:

- There is an outstanding information gap to perform a Lake Whitefish spawning study on Lake Abitibi.
- There is an outstanding information gap for fisheries options to perform a bathymetry study, therefore the options will be considered once data from study is available.
- There is an outstanding information gap to perform a shoreline erosion inventory. The operating regime will be re-visited when the results of the study are available.

4.0 Iroquois Fall G.S. (ACCC)

Planning Team No Consensus
 PAC No Consensus
 Steering Committee Concurrence

Selected Operating Option

Operating Range: 247.60 – 247.85 m
Absolute Range: 247.35 – 249.11 m
Energy Emergency: None
Summer Band: None
Winter Drawdown: None
Flood Allowance: 247.85 – 249.11 m
Maximum Discharge: None
Minimum Discharge: 56 cms always (MOE constraint)
Natural Flow regime: **Low Flow :** None
Bankfull Flow: None
Riparian Flow: None
Others: Educate the public

Benefits:

- There are no changes to the operating plan. This operating regime provides a good balance between the environment, society and power generation.
- This MOE constraint requiring a minimum discharge of 56 cms maintains appropriate fish habitat. This constraint also provides adequate flows to ensure proper operation of Iroquois Falls Power Corporation's submerged discharge diffuser.
- The existing operating range accommodates majority of users' navigational and recreational needs.
- The flood allowance mitigates flooding of docks and shoreline upstream.
- This operating regime maintains public safety and public awareness.
- The minimum discharge maintains appropriate habitat for waterfowl and wildlife.
- This operating regime maintains existing power generation.

Conflicts:

- This regime limits maximum power generation (OPGI - 11,000 households per year / 132,000 MW-hr per year, ACCC – 1,000 households per year / 12,000 MW-hr per year and Algonquin - 267 households per year / 3,204 MW-hr per year)
- The minimum flow of 56 cms may deviate from natural flow regime at certain times of the year, emulating natural flow at other times.
- Ontario Parks has a concern that the existing operating practice may negatively affect the shoreline, possibly causing erosion.

Outstanding Information Gaps:

- There is an outstanding information gap to perform a shoreline erosion inventory. The operating regime will be re-visited when the results of the study are available.

5.0 Long Sault G.S. (Algonquin Power)

Planning Team Consensus
 PAC Consensus
 Steering Committee Concurrence

Selected Operating Option

Operating Range: 231.75 – 232.05 m
Absolute Range: 231.75 – 232.05 m
Energy Emergency: None
Summer Band: None
Winter Drawdown: None
Flood Allowance: None
Maximum Discharge: None
Minimum Discharge: 56.6 cms or at incoming reservoir inflows in the Abitibi River, whichever is less, to be passed at all times at the outflow of the dam.
Natural Flow regime: **Low Flow** : outflows = inflows
Bankfull Flow: None
Riparian Flow: None
Others: run-of-the-river operation

Benefits:

- There are no changes to the operating plan. This operating regime provides a good balance between the environment, society and power generation.
- The current operating regime maintains appropriate fish habitat. A post EA fisheries assessment will be conducted in 2007.
- The minimum discharge and operating range accommodates majority of users' navigational and recreational needs.
- This operating regime maintains wildlife habitat.
- The operation of the facility maintains public safety and public awareness.
- This operating regime maintains existing power generation.
- This facility is operated as run-of-the-river therefore emulating natural flow regime.

Conflicts:

- The minimum discharge limits maximum power generation at Island Falls GS downstream..

Outstanding Information Gaps:

- None.

6.0 Island Falls G.S. (ACCC)

Planning Team Consensus
 PAC Consensus
 Steering Committee Concurrence

Selected Operating Option

Operating Range: 214.20 – 215.30 m
Absolute Range: 214.20 – 215.54 m
Energy Emergency: None
Summer Band: 214.70 – 215.30 m Victoria Day weekend to Thanksgiving Day weekend **(new)**
 * SAC to review if MTO discontinues Ferry service
Winter Drawdown: None
Flood Allowance: 215.30 – 215.54 m
Maximum Discharge: None
Minimum Discharge: 10 cms daily average for fisheries **(new)**
Natural Flow Regime: **Low Flow:** None
Bankfull Flow: None
Riparian Flow: None
Others: Educate the public

Benefits:

- The minimum discharge emulates natural flow regime and improves fish habitat from the current operating regime.
- Implementation of a summer band improves navigational and recreational needs by formalizing the needs of the users. It also maintains sustainable economic opportunities by providing adequate water level for the MTO ferry at Gardiner.
- This operating regime maintains appropriate wildlife habitat.
- This operating regime balances the environment, society and power generation.
- This operating regime maintains public safety and public awareness.

Conflicts:

- This regime limits maximum power generation (XXX households)
- May affect flexibility of mitigating flooding during the summer months
- Ontario Parks and public concern that existing operating regime practice may cause shoreline erosion

Outstanding Information Gaps:

- There is an outstanding information gap to perform a shoreline erosion inventory. The operating regime will be re-visited when the results of the study are available.

7.0 Abitibi Canyon G.S. (OPGI)

Planning Team Consensus
 PAC Consensus
 Steering Committee Concurrence

Selected Operating Option

Operating Range: 191.50 – 195.49 m
Absolute Range: 190.85 – 195.49 m
Energy Emergency: 190.85 – 191.50 m
Summer Band: None
Winter Drawdown: winter drawdown to 191.50 m prior to freshet
Flood Allowance: None
Maximum Discharge: None
Minimum Discharge: None
Natural Flow regime: **Low Flow:** None
Bankfull Flow: None
Riparian Flow: None
Others: Educate the public

Benefits:

- There are no changes to the existing operating plan.
- The existing operating regime maintains appropriate fish habitat. Once the result of the fish community and fish habitat assessments are completed, the operating regime will be re-visited to see if enhancements can be made.
- The drawdown strategy maintains flood mitigation and public safety. It also mitigates erosion by reducing peak flows.
- This operating regime also maintains public awareness.
- This operating regime maintains power existing generation.

Conflicts:

- The peaking operations may negatively affect navigation.
- Winter recreation downstream of dam may be affected by the drawdown. Users must be cautious due to the possibility of varying ice conditions.
- The winter drawdown may negatively affect fisheries. Once the result of the fish community and fish habitat assessments are completed, the operating regime will be re-visited to see if enhancements can be made.

Outstanding Information Gaps:

- There is an information gap to perform a fish community and fish habitat assessments in the headpond. The operating regime will be re-visited when the results of the study are available.

8.0 Otter Rapids G.S. (OPGI)

Planning Team Consensus
 PAC Consensus
 Steering Committee Concurrence

Selected Operating Option

Operating Range: 118.80 – 122.10 m
Absolute Range: 118.46 – 122.27 m
Energy Emergency: 118.46 – 118.80 m
Summer Band: None
Winter Drawdown: winter drawdown to 118.80 m prior to freshet
Flood Allowance: 122.10 – 122.27 m
Maximum Discharge: None
Minimum Discharge: None
Natural Flow regime: **Low Flow:** None
Bankfull Flow: None
Riparian Flow: None
Others: Educate the public

Benefits:

- There are no changes to the existing operating regime.
- The existing regime maintains appropriate fish habitat upstream.
- The drawdown strategy maintains flood mitigation and public safety.
- This operating regime mitigates erosion by reducing peak flows.
- This operating regime maintains existing power generation.
- This operating regime maintains public awareness.
- The operating regime accommodates the majority of users' navigational and recreational needs.

Conflicts:

- The peaking operations may negatively affect fisheries, navigation and recreation downstream.
- This operating regime may contribute to erosion of the HBC site.

Outstanding Information Gaps:

- There is an information gap that requires review of current erosion studies and archaeological studies performed on the HBC site.
- There is an outstanding information gap to perform a fisheries study downstream of the facility to determine the affects of the peaking operation.
- There is an information gap at New Post Diversion to review the impacts on the Little Abitibi River with spring flows and to investigate the costs of making the dam operational. The operating regime will be re-visited when the results of the study are available within 5 years.

9.0 Newpost Creek Diversion (OPGI)

Planning Team No Consensus
 PAC No Consensus
 Steering Committee Concurrence

Selected Operating Option

Operating Range: set spillpoint of 218.80 m (set in 1974)
Absolute Range: None
Energy Emergency: None
Summer Band: None
Winter Drawdown: None
Flood Allowance: None
Maximum Discharge: None
Minimum Discharge: Leakage
Natural Flow regime: **Low Flow:** None
Bankfull Flow: None
Riparian Flow: None

Others:

- Within the first 5 years of the plan, the proponent commits to undertake necessary studies, engineering reviews and operational tests to determine if operating the New Post Diversion Dam to spill water in the spring will stop the further degradation of New Post Creek and the Little Abitibi River downstream of the dam and restore the Little Abitibi River ecosystem to a more natural condition. If the results of these studies indicate that action should be taken, the proponent commits to implement the recommended changes to the operating regime during the term of this plan.
- Educate the public

Benefits:

- There are no changes to the operation regime of this facility. Once the results of the studies are completed, the operating regime will be re-visited to determine if enhancements can be made.
- This operating regime maintains existing power generation at Otter Rapids. The Newpost Diversion contributes 11.34 % of the power generated at Otter Rapids.
- This operating regime maintains public safety and public awareness.
- The studies are an adaptive approach to address concerns about erosion within the New Post Diversion and the condition of the downstream ecosystem within the Little Abitibi River.

Conflicts:

- The peaking operations deviate from a natural flow regime and may negatively impact fisheries downstream (Little Abitibi River, Bad River) as well as navigation and recreation downstream.
- There is erosion in the diversion channel within Little Abitibi Provincial Park.

Outstanding Information Gaps:

- There is an information gap to perform a study on sea run brook trout. The operating regime will be re-visited when the results of the study are available.
- There is an information gap to review the impacts on the Little Abitibi River with spring flows and to investigate the costs of making the dam operational. The operating regime will be re-visited when the results of the study are available in 5 years.
- There is an information gap to review erosion in the Diversion.

10.0 Monteith Dam (MNR)

Planning Team Consensus
PAC Consensus
Steering Committee Concurrence

Selected Operating Option

Operating Range: maintain headpond elevation of 260.36 m at all times
Absolute Range: None
Energy Emergency: None
Summer Band: None
Spring Drawdown: Spring drawdown so that level in Moose Lake does not exceed 260.66 m
Flood Allowance: None
Maximum Discharge: None
Minimum Discharge: Leakage
Natural water level regime: N/A
Others: Educate the public

Benefits:

- There are no changes to the operating regime.
- This operating regime accommodates the majority of users' navigational and recreational needs in Moose Lake.
- The drawdown strategy maintains flood mitigation and public safety.
- This operating regime maintains existing power generation downstream.

Conflicts:

- None

Outstanding Information Gaps:

- None.

11.0 Lillabelle Lake Dam (MNR)

Planning Team Consensus
PAC Consensus
Steering Committee Concurrence

Selected Operating Option

Operating Range: maintain level of 245.00 m at Lillabelle Lake
Absolute Range: None
Energy Emergency: None
Summer Band: None
Winter Drawdown: None
Flood Allowance: None
Maximum Discharge: None
Minimum Discharge: None
Natural water level regime: N/A
Others: Educate the public

Benefits:

- There are no changes to the existing operating regime.
- The operating level allows tourist outfitters to safely dock their airplanes and maintains sustainable economic opportunities on Lillabelle Lake.
- The operating level accommodates majority of users' navigational and recreational needs in Lillabelle Lake.
- This operating regime maintains public safety and public awareness.

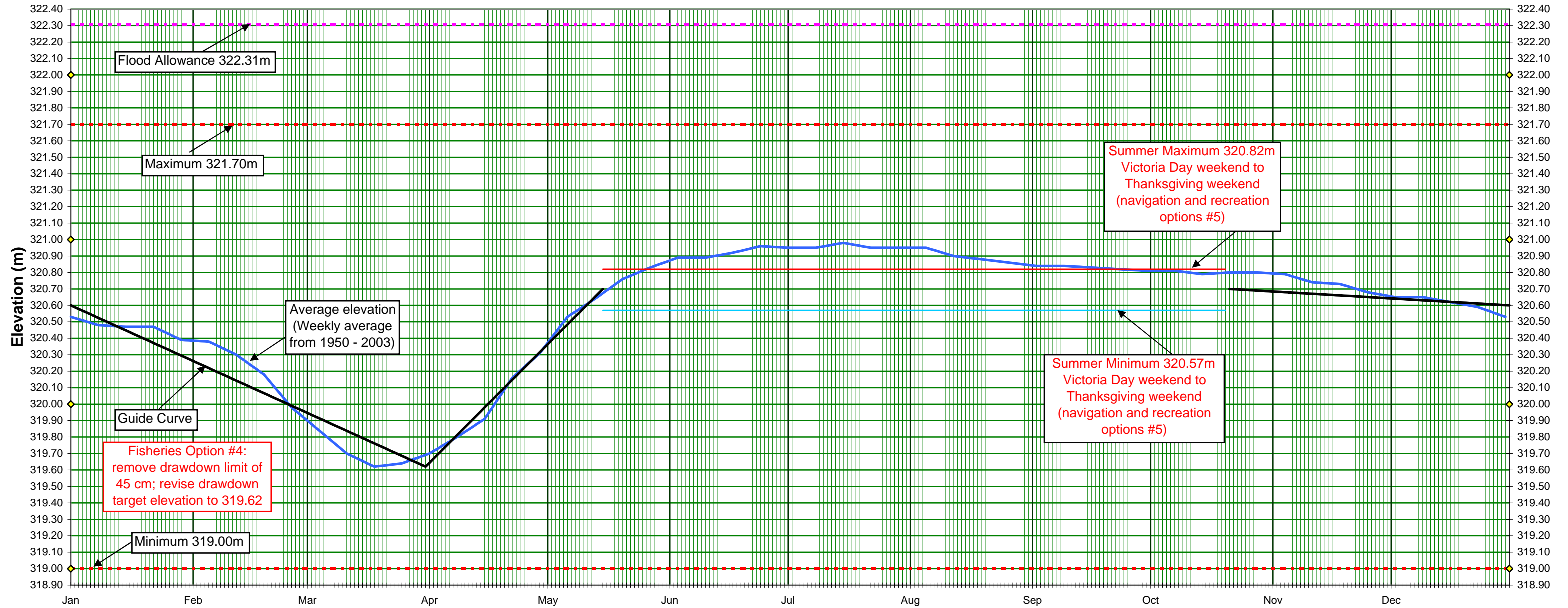
Conflicts:

- The current level of 245.00 m restricts the movement of fish over the weir during periods of low water (Jul – Aug).
- Maintaining a fixed level deviates from natural flow regime.

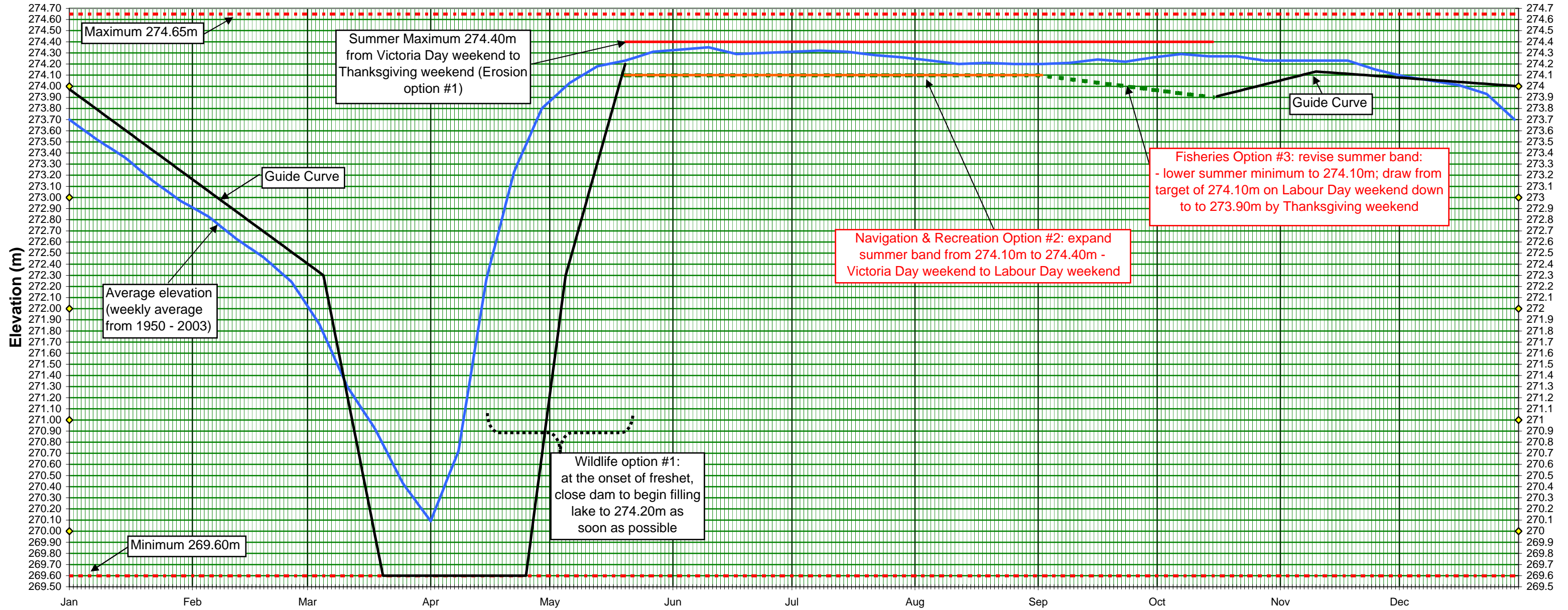
Outstanding Information Gaps:

- None.

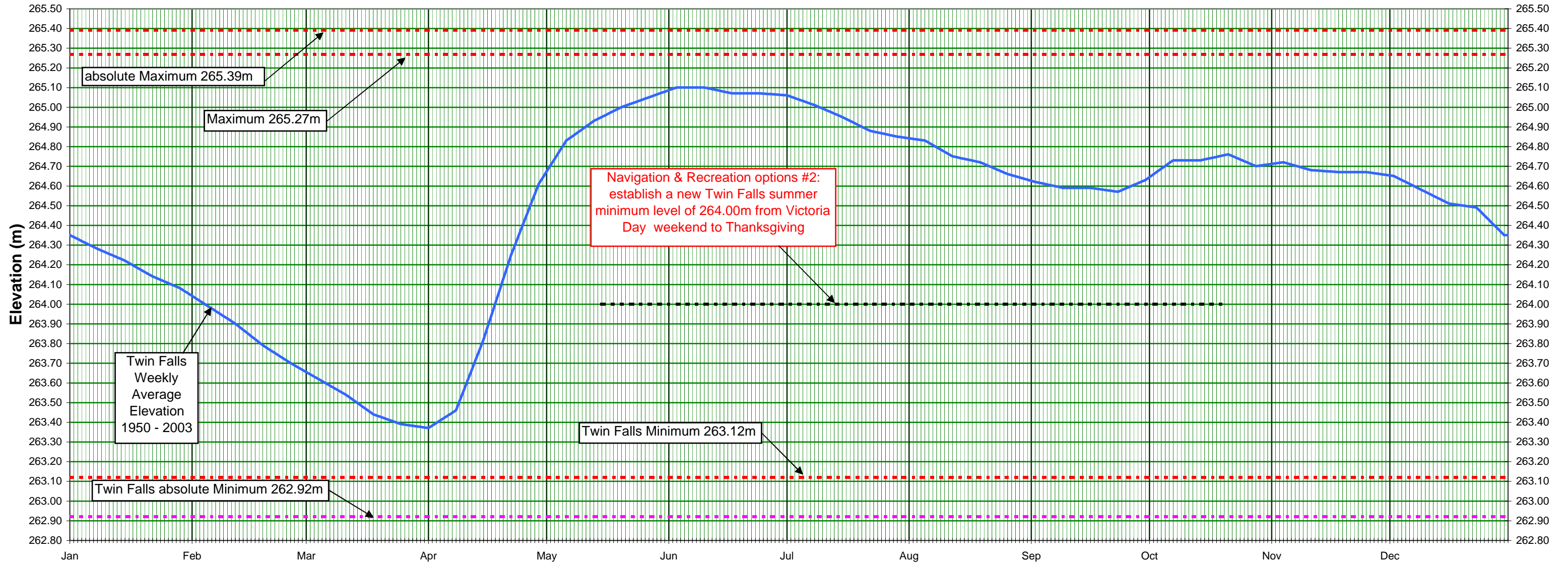
Watabeag Lake (OPGI) Selected Option



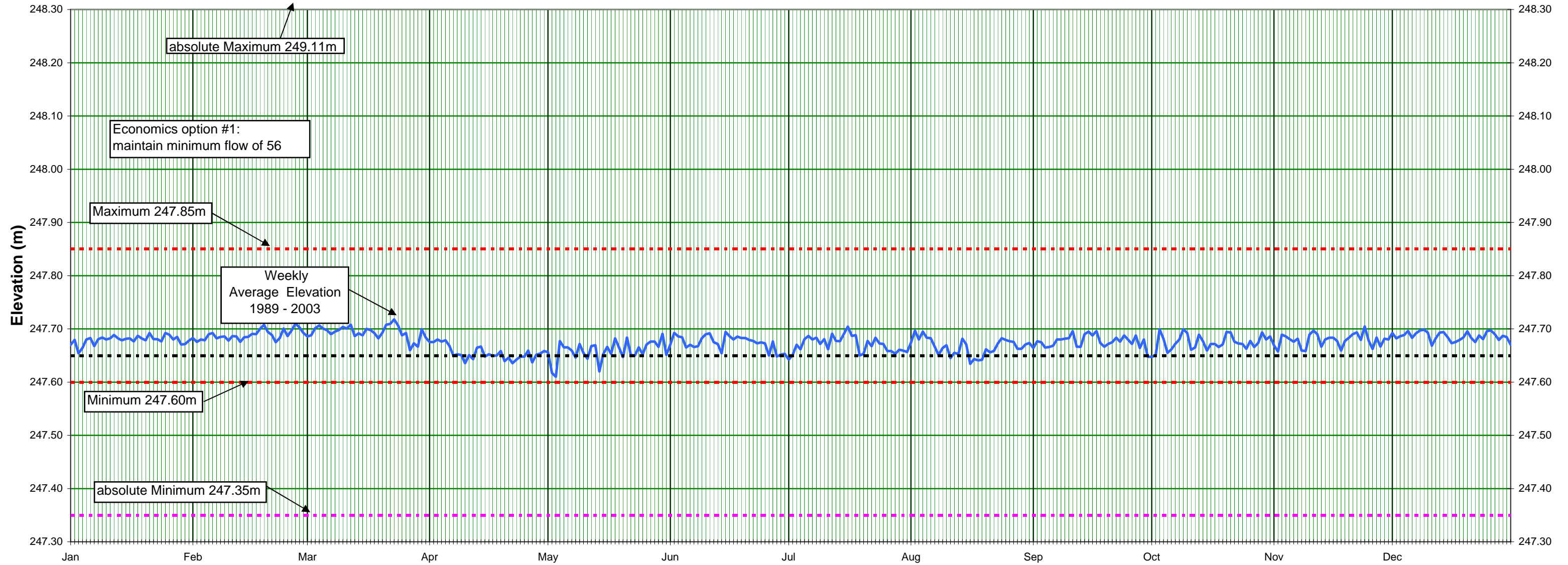
Frederickhouse Lake (OPGI) Selected Option



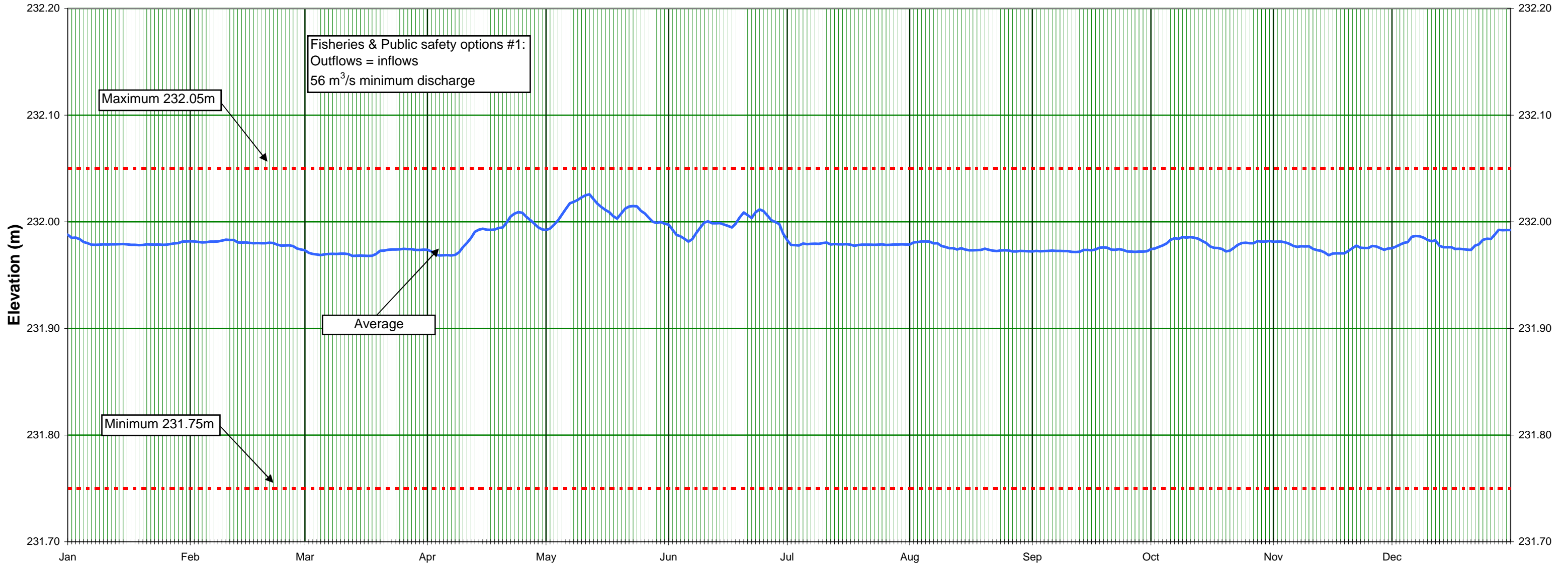
Twin Falls GS (ACCC) Selected Option



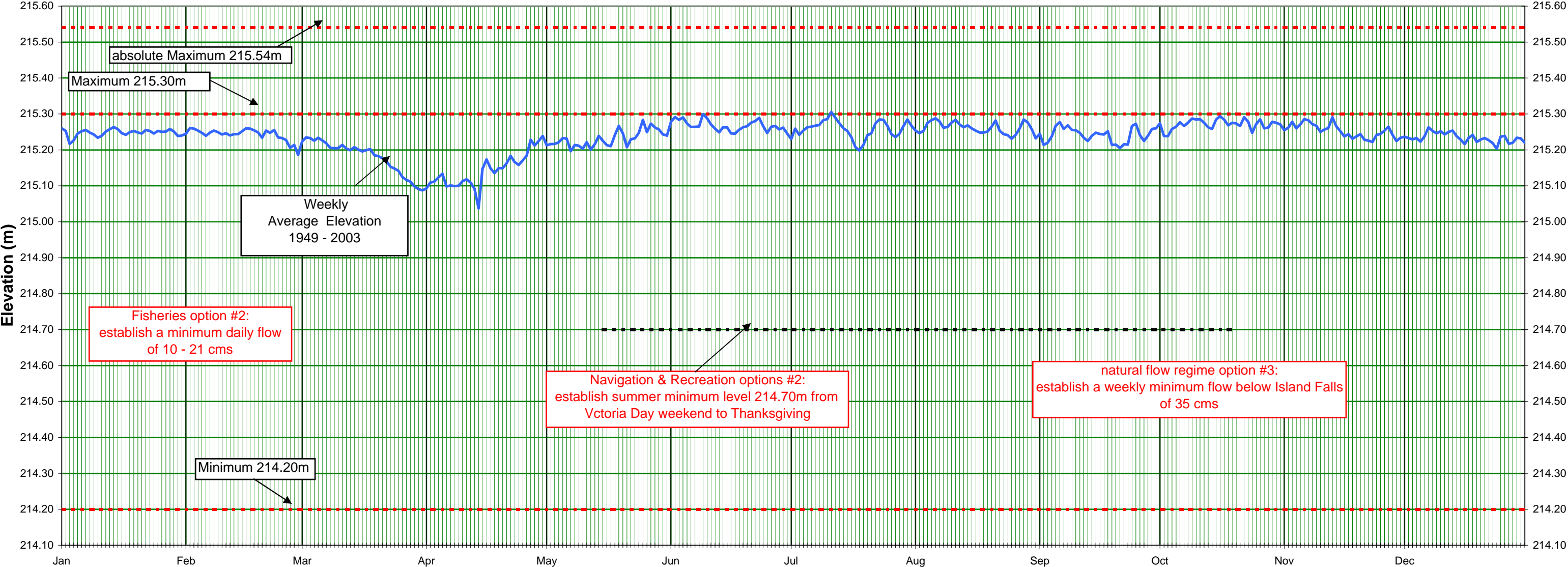
Iroquois Falls GS (ACCC) Selected Option



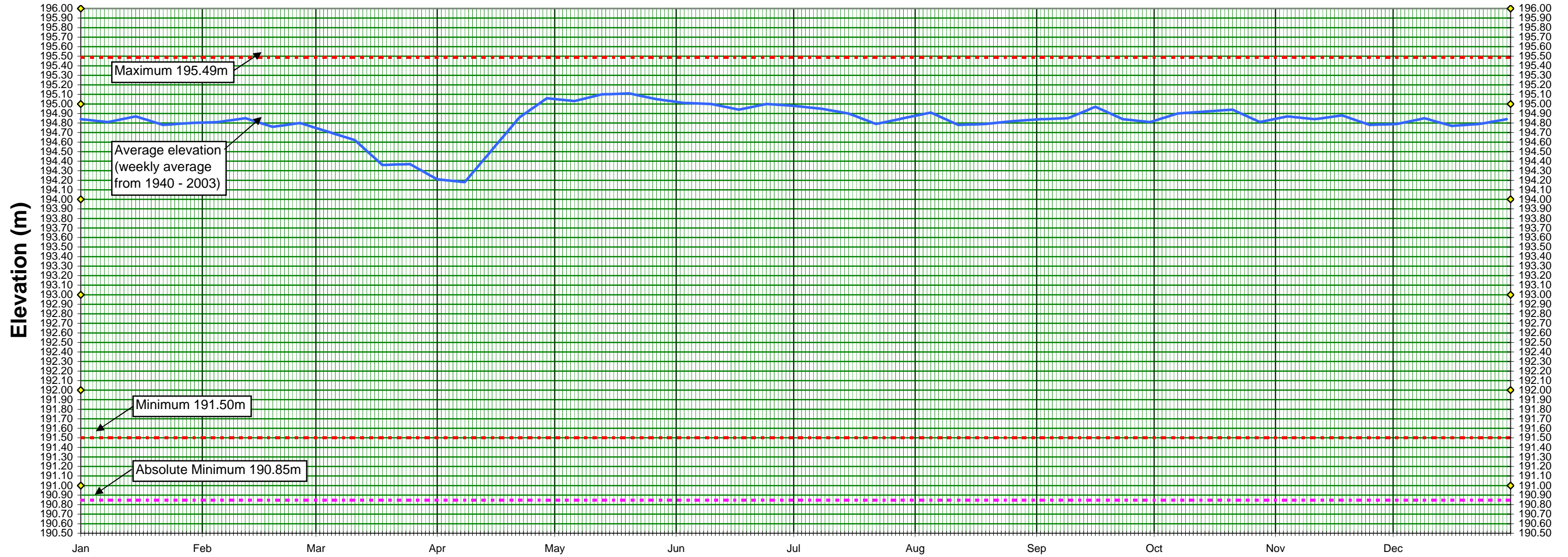
Long Sault GS (Algonquin Power) Selected Option



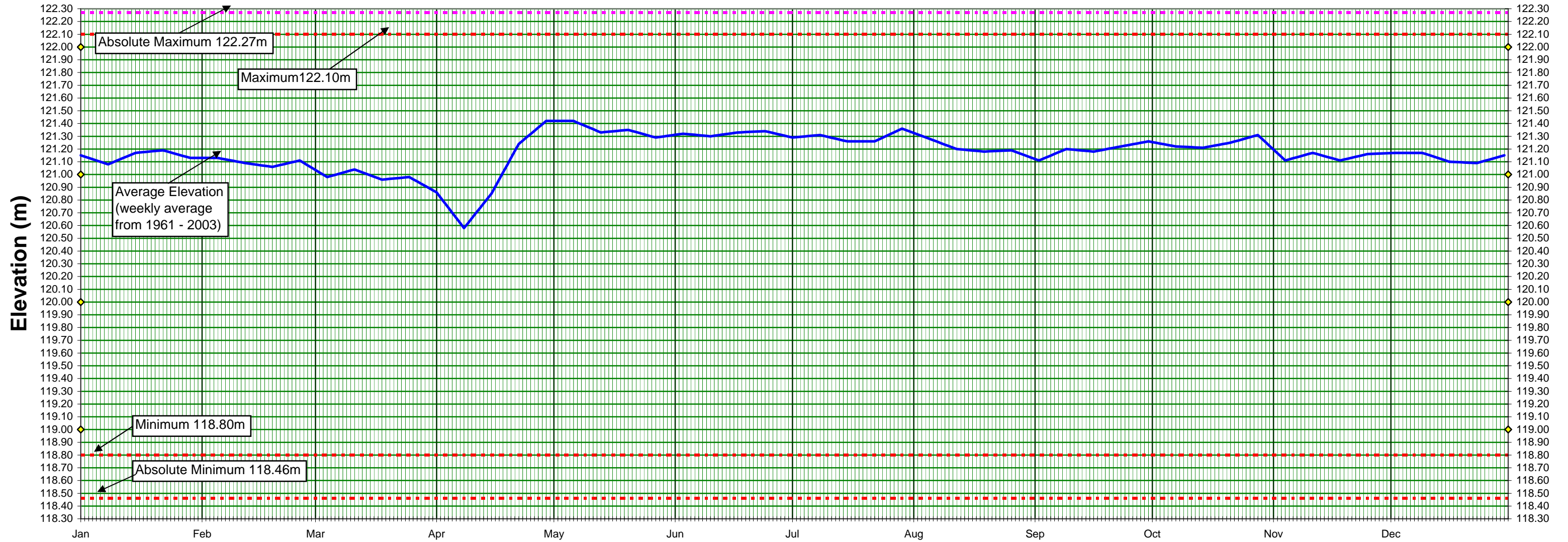
Island Falls GS (ACCC) Selected Option



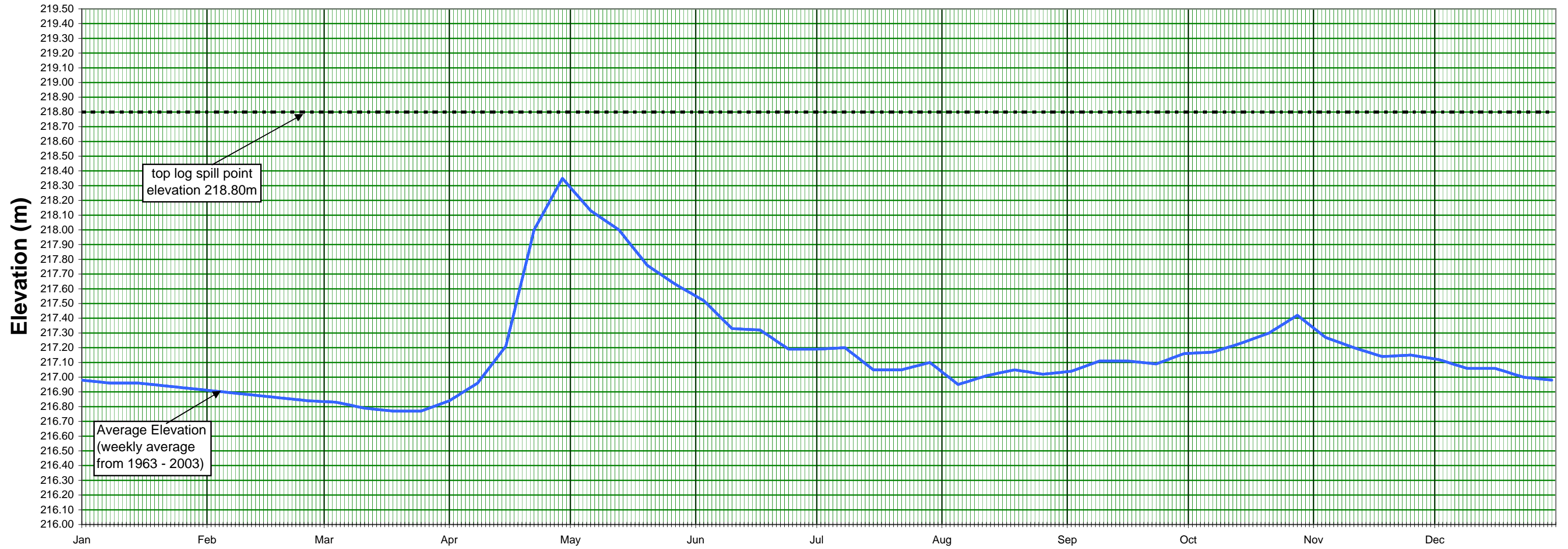
Abitibi Canyon (OPGI) Selected Option



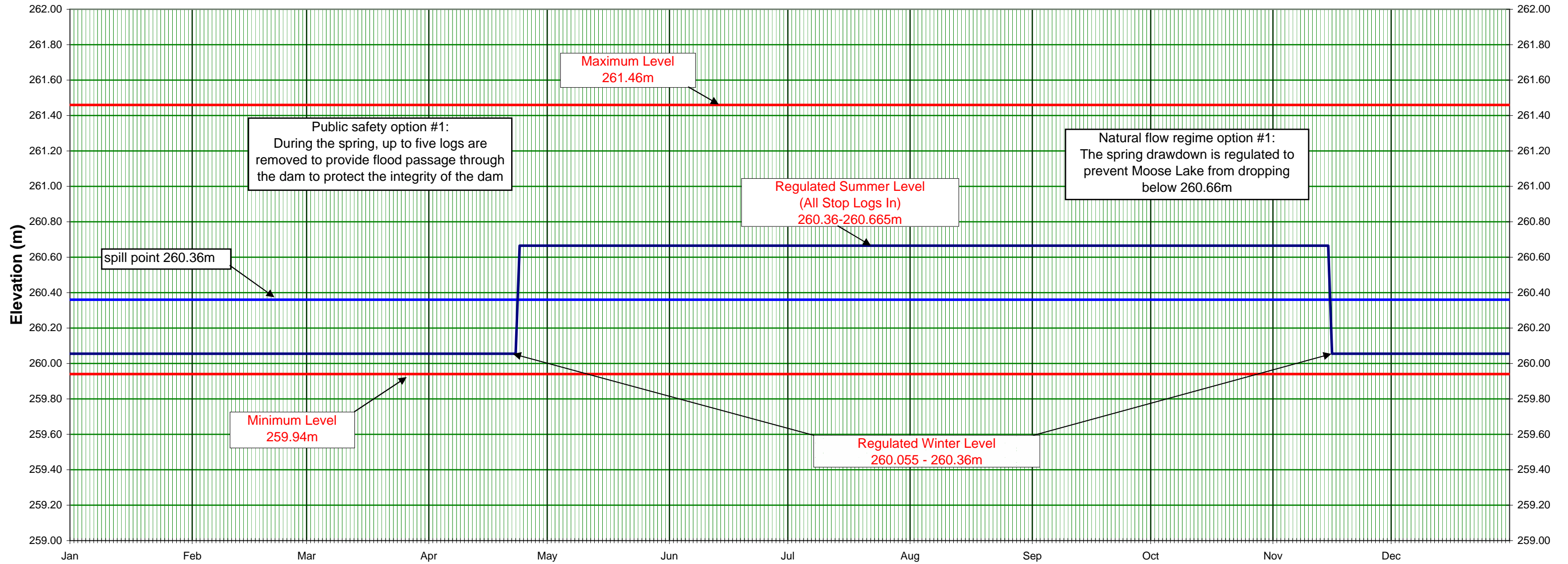
Otter Rapids GS (OPGI) Selected Option



Newpost Diversion (OPGI) Selected Option



Monteith Dam (MNR) Selected Option



Lillabelle Lake (MNR) Selected Option

